

JOINT TASK FORCE REPORT

153633

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Occupational Safety and
Health Administration
Washington, D.C. 20210

ENVIRONMENTAL PROTECTION AGENCY
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The Joint Task Force presents this copy of the Task Force Report on Compliance with On-Site Health and Safety Requirements at Hazardous Waste Incinerators. The Joint Task Force consisted of the Occupational Safety and Health Administration, the Environmental Protection Agency, State OSHA, and State environmental representatives. This report was prepared to present the objectives, findings, conclusions, and followup activities of the Fall, 1990, investigation of selected hazardous waste incinerators in the United States.

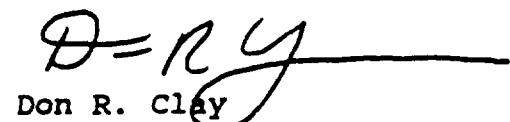
The Joint Task Force evaluated compliance with worker health and safety training requirements; the facility's ability to prevent and respond to emergencies; and potential worker exposure routes from equipment and areas relating to the hazardous waste incinerator operations.

The report includes an executive summary and a main body which summarizes both the OSHA and EPA findings in a narrative and tabulated form. A map is included that plots the location of the hazardous waste incinerators inspected as part of the investigation.

The investigation also demonstrates that two separate federal agencies, with varying responsibilities for protection of the public, can effectively work together to address a potential health problem.

Sincerely,


Gerard F. Scannell
Assistant Secretary
Occupational Safety and
Health Administration


Don R. Clay
Assistant Administrator
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Agency

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REPORT ON
EVALUATION OF COMPLIANCE WITH ON-SITE HEALTH AND SAFETY
REQUIREMENTS AT HAZARDOUS WASTE INCINERATORS

MAY 23, 1991

U.S. EPA - OSHA Joint Task Force

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**Task Force Report on Compliance with On-Site Health and Safety
Requirements at Hazardous Waste Incinerators
Executive Summary**

Conclusion
Chem. OSHA
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Background

EPA and OSHA jointly established the Task Force to evaluate compliance with on-site health and safety requirements at selected hazardous waste incinerators. Unannounced inspections were conducted at 29 of the approximately 140 operating hazardous waste incinerators. These inspections focused on determining compliance with worker health and safety training requirements, and preparedness prevention and emergency response requirements. Potential worker exposure routes from equipment and areas relating directly to incinerator operations were also evaluated.

Findings

1. OSHA identified a total of 320 violations in five major areas of its regulations. These violations include 111 in the health and safety training area; 22 in facility contingency plans; 19 in workplace surveillance and monitoring; 20 in potential chemical exposure to workers during incinerator and waste handling operations; and 148 in general health and safety (e.g. lighting, fall protection, materials storage, electrical, etc.) violations.
2. EPA identified a total of 75 violations of its standards at the 29 facilities inspected. These violations include 14 for failure to provide adequate information and/or training to employees; 16 for non-compliance with the contingency plans and emergency response requirements; 29 for non-compliance with general inspections and preparedness and prevention requirements; and 16 for failure to comply with operational procedures requirements. Of these 16 violations, only 5 related specifically to incinerator operations.

EPA also noted a significant number of waste feed cut-offs and emergency by-pass openings. The waste feed cut-off system is intended to stop waste entering the incinerator combustion unit when certain operating conditions are exceeded. Emergency by-passes are intended to prevent ground level fugitive emissions and possible explosions from excessive pressure in the combustion unit. While both devices are designed for safety purposes, the frequent use of these devices at some facilities may indicate a need to improve operating practices.

Conclusions

OSHA did not observe evidence of worker overexposure to chemicals that could cause serious harm. However, EPA and OSHA are concerned with the widespread deficiencies in the area of worker health and safety training, which could potentially lead to operational and exposure problems. EPA is also concerned about the apparent overuse of waste feed cut-offs and emergency by-passes at some facilities.

Follow-up Actions

- enforcement follow-up on the violations found
- improving inspection procedures and expertise in the area of incineration as well as more broadly throughout the waste management industry
- additional assessment of the cause and impact of waste feed cut-off and by-pass opening events
- re-opening permits, where necessary, to address these events
- review of the quality of existing permits
- industry outreach

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**Appendix A - Frequency of Automatic Waste Feed Cutoffs and
Emergency By-Pass Openings**

I. Introduction

The U.S. Environmental Protection Agency (EPA) and the Department of Labor's Occupational Safety and Health Administration (OSHA) jointly established a Task Force to evaluate compliance with on-site health and safety requirements at selected hazardous waste incinerators across the country. The Task Force, created in July 1990, inspected 29 of the approximately 140 hazardous waste incinerators then operating in the United States. The incinerators evaluated by the Task Force included all commercial hazardous waste incinerators that have either permits or "interim status" (i.e., without a final permit), all other hazardous waste incinerators operating under interim status, and all incinerators burning waste at Superfund sites at the time of investigation.

OSHA and EPA have different, though related, responsibilities with respect to the regulation of hazardous waste incinerators. The Occupational Safety and Health (OSH) Act of 1970 authorizes the Department of Labor to require employers to assure safe and healthful working conditions for the nation's workforce. Specifically, OSHA is authorized to: set mandatory occupational safety and health standards; provide an effective enforcement program (including investigations and inspections to determine the status of compliance with safety and health standards and regulations, as well as the issuance of citations for non-compliance); and provide consultation, training, education, and other technical assistance to employers and employees. The OSH Act encourages States to develop and operate their own safety and health programs, or "plans," providing at least as effective protection as the Federal program. Two OSHA State-plan States were involved in this effort.

The Resource Conservation and Recovery Act (RCRA) enforced by EPA and the States also sets out specific requirements affecting workers at hazardous waste treatment, storage, and disposal facilities, including hazardous waste incinerators. These requirements cover personnel training, contingency planning and emergency response, emergency preparedness and prevention, and operational procedures. With respect to the safety and health of workers inside the facilities, EPA is required under RCRA to provide information to OSHA and the National Institute for Occupational Safety and Health (NIOSH) concerning the location of hazardous waste sites and the nature of the hazards at such sites in order to assist OSHA and NIOSH in carrying out their duties. EPA also establishes and enforces comprehensive hazardous waste incinerator design and performance standards under RCRA, but compliance with these requirements was not evaluated as part of this study.

OSHA and EPA conducted concurrent unannounced compliance inspections of each facility. The inspection teams consisted of OSHA Federal or State compliance officers, EPA inspectors, and in some cases, State compliance inspectors. Both agencies had access to the same information and conducted employee interviews to determine the degree of compliance with existing health and safety regulations.

II. Task Force Objectives

The Task Force's objectives included determining compliance with and evaluating the effectiveness of:

Worker health and safety training requirements. To ensure that workers are trained in hazardous waste management procedures, the Task Force evaluated the facilities' compliance with training requirements in OSHA and RCRA. The Task Force, recognizing that meeting the regulatory requirements of a training program does not by itself ensure program effectiveness, also set out to determine the adequacy of personnel training program implementation through interviews with employees.

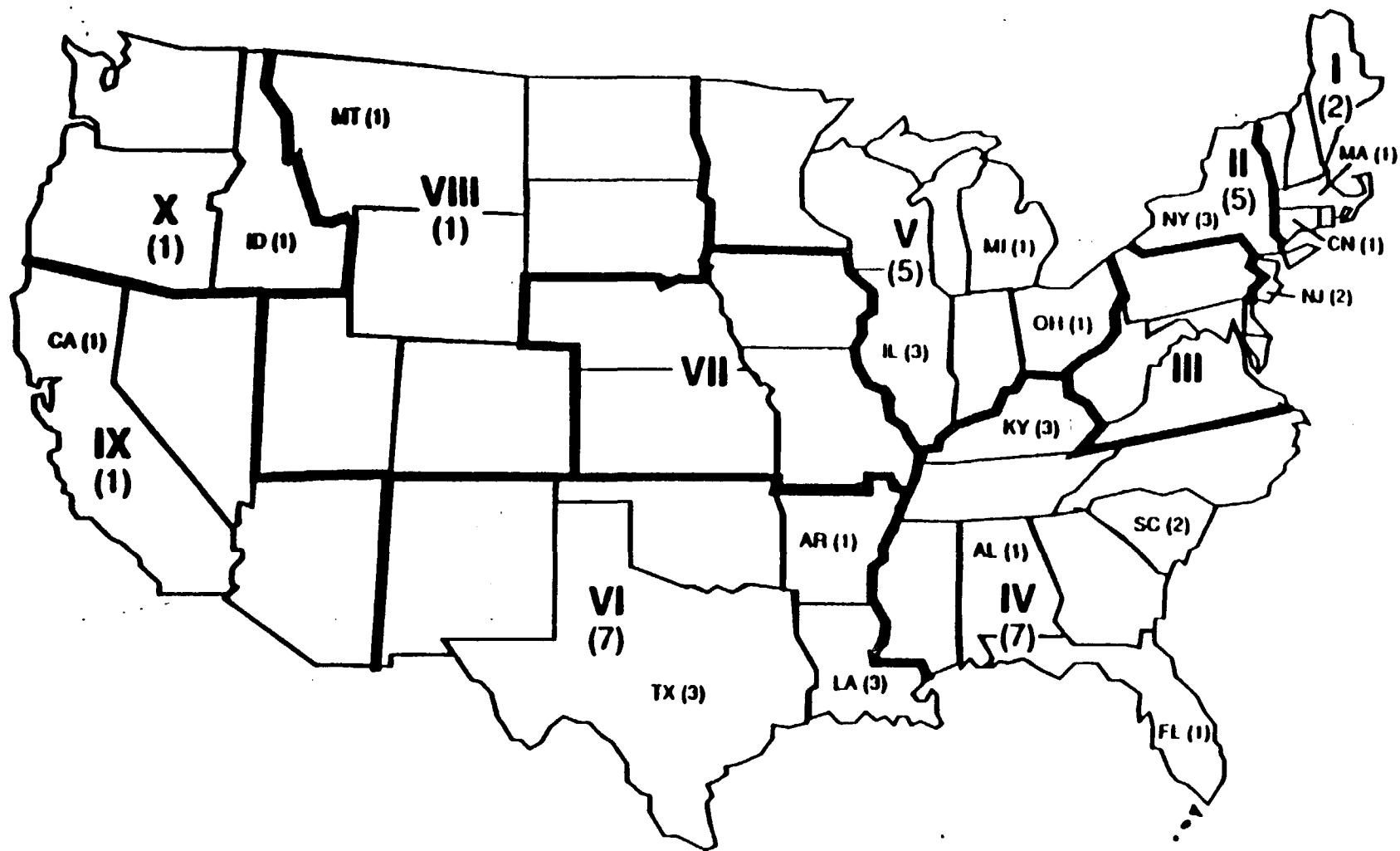
The facility's ability to prevent and respond to emergencies. The inspectors reviewed the degree to which each facility had designed systems to prevent emergencies, and evaluated the procedures and policies of each facility to effectively respond to an emergency situation.

Potential worker exposure routes from equipment/areas relating directly to the hazardous waste incinerator operations. By visually inspecting operations and reviewing operating records, the agencies sought to identify potential exposure routes associated with each hazardous waste incinerator.

III. The Task Force Investigation Universe

The 29 selected facilities fall under the jurisdiction of EPA and OSHA Regions I, II, IV, V, VI, VIII, IX, and X. At two of the facilities, (the Lawrence Livermore Laboratory in California and the Idaho National Engineering Laboratory) the Department of Energy instead of OSHA has jurisdiction for worker health and safety. Consequently, OSHA conducted inspections in 27 of the 29 selected facilities, and OSHA's findings presented in Chapter IV are related only to those 27 facilities. The following map details the number and distribution of facilities that were inspected. The 29 facilities inspected by OSHA and/or EPA include the following:

U.S. EPA AND OSHA REGIONS Task Force Universe



Facility
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Facility Name	State	Region
Pfizer, Inc.	CT	I
Polaroid Corporation	MA	I
Rollins Environmental	NJ	II
BASF Corporation	NJ	II
Occidental Chemical Corporation	NY	II
General Electric Silicones	NY	II
Schenectady Chemicals, Inc.	NY	II
Allied Signal, Inc.	AL	IV
S&S Flying Services Project	FL	IV
Olin Chemical Corp.	KY	IV
Atochem North America, Inc.	KY	IV
LWD, Inc.	KY	IV
ThermalKEM, Inc.	SC	IV
Thermal Oxidation Corp.	SC	IV
CWM Chemical Services, Inc. Chicago Incinerator Facility	IL	V
CWM Trade Waste Incineration	IL	V
Paxton Ave. Lagoons Site	IL	V
The Upjohn Company	MI	V
Ross Incineration Services, Inc.	OH	V
ENSCO, Inc.	AR	VI
DuPont Company	LA	VI

Facility Name	State	Region
Rhone Poulenc	LA	VI
Rollins Environmental Services	LA	VI
Chemical Waste Management	TX	VI
Rhone Poulenc	TX	VI
Rollins Environmental Services	TX	VI
Blackfoot Post & Pole Site	MT	VIII
Lawrence Livermore National Laboratory	CA	IX
Idaho National Eng. Lab.	ID	X

IV. OSHA Findings

General Findings

A total of 62 inspections were conducted at 27 hazardous waste incinerator sites in six regions by Federal OSHA and two states operating OSHA-approved State plans. A comprehensive worker health inspection was conducted of the incinerator and incinerator-related operations at each facility; when conditions warranted, a specialized safety inspection was also conducted. Twenty three of these inspections were of contractor operations at the sites visited. Nineteen of the 62 inspections resulted in no citations. Forty-three of the inspections resulted in citations for alleged violations which are summarized below in Tables 1-4. While the scope of the OSHA inspections was limited as much as possible to incinerator and incinerator-related operations, the operations were evaluated to determine compliance with all applicable OSHA safety and health standards. Inspections were expanded in scope wherever necessary to address apparent hazards noted outside of the incinerator operations. The findings have been classified into five separate program aspects: health and safety training, facility contingency plans, workplace surveillance and monitoring, chemical exposure to workers during incinerator and waste handling operations, and general health and safety findings. The following is an overview of the violations noted.

OSHA noted a total of 320 violations of its standards at the 27 inspected sites. One hundred and eleven (111) violations were identified for failure to provide adequate health and safety information and/or training to employees. (See Table 1). Twenty-two (22) violations were identified for failure to adequately develop emergency site contingency plans (see Table 2). Nineteen (19) violations were identified for failure to perform reasonable surveillance of workplace operations or activities (see Table 3). Twenty (20) violations were identified for failure to control exposure to hazardous chemicals through exposure monitoring, provision of personal protective equipment, and appropriate work practices. No airborne exposures excursions of OSHA Permissible Exposure Limits were documented in these inspections (see Table 4). One hundred and forty-eight (148) violations were identified for general worker safety and health conditions in the facilities which were not directly related to the incinerator operations of the facility (see Table 5).

Of the violations cited, 214 were serious and 106, other-than-serious. The violation rate was 5.1 total violations and 3.4 serious violations per inspection. To put this in context, OSHA's violation rate for all industries is 3.8 total violations and 2.5 serious violations per inspection.

The most frequently cited violations (which account for approximately one-third of the violations OSHA observed at the 27 inspected hazardous waste incinerator facilities) were related to deficiencies in communicating to workers the hazards of the chemical substances present at their worksites and providing adequate health and safety information to minimize those hazards. OSHA believes that remedying the training and education problems at these facilities would heighten safety and health awareness and could help significantly in resolving many of the other worker safety and health problems that were found in the course of the inspections.

The problems observed by OSHA were not equally distributed among the 27 operators. Three of the incinerator facility operators received no citations. Two other operators were found to be in compliance with health regulations, but received citations for alleged violations of safety standards. One operator was in compliance with safety regulations but received a citation for alleged health violations.

Table 1:
VIOLATIONS IN HEALTH AND SAFETY TRAINING

<u>Standard Cited</u>	<u>Total Violations</u>	<u>Description of Violation</u>
29 CFR 1910.1200	28 violations	Failure to provide training on chemical hazards in the workplace.
29 CFR 1910.134	25 violations	Failure to train employees in procedures for the selection, fit, use, and maintenance of respirators and personal protective equipment.
29 CFR 1910.120	20 violations	Failure to provide adequate training to workers assigned to hazardous waste operations.
29 CFR 1910.147	15 violations	Failure to document training on lockout/tagout procedures.
29 CFR 1910.20	9 violations	Failure to train employees on access to employee medical records.
29 CFR 1910.38	7 violations	Failure to train workers assigned to fire control activities.
29 CFR 1910.120	5 violations	Failure to train employees on decontamination procedures.
29 CFR 1926.21	2 violations	Failure to instruct employees of the recognition and avoidance of unsafe conditions.

Table 4:
**VIOLATIONS IN POTENTIAL CHEMICAL EXPOSURE TO
WORKERS DURING INCINERATOR AND
WASTE HANDLING OPERATIONS**

<u>Standard Cited</u>	<u>Total Violations</u>	<u>Description of Violation</u>
29 CFR 1910.132 29 CFR 1910.133	13 violations	Failure to use proper personal protective equipment for eyes, face, and head when employees were exposed to hazards capable of causing injury and impairment.
29 CFR 1910.1001 29 CFR 1910.1025 29 CFR 1910.1028 29 CFR 1910.1045	6 violations	Failure to perform initial 8-hour, time-weighted average exposure monitoring (for lead/asbestos/benzene/ acrylonitrile).
29 CFR 1910.141	1 violation	Food and beverage was consumed in an area with potential exposure to toxic materials.

Table 5:
VIOLATIONS IN GENERAL HEALTH AND SAFETY

<u>GENERAL CATEGORY</u>	<u># VIOLATIONS</u>
Fall Protection	26
Materials Storage	25
Electrical	24
Life Safety Codes	16
Machine Guarding	9
Fire Protection	9
Noise	9
Standards for Asbestos, Lead, Benzene, and Acrylonitrile	7
Welding	7
Recordkeeping	6
Vehicle/Equipment	4
Confined Space	3
Crane	2
Elevator Safety	1

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V. EPA Findings

EPA Regional inspectors conducted inspections at all 29 targeted facilities. These inspections covered: personnel training programs; contingency plans and emergency response; general inspection requirements and preparedness and prevention; and operational procedures for both the incinerator and storage and handling of hazardous waste prior to incineration. In addition, historical compliance information specifically on the incinerator operations was collected and analyzed from past inspections conducted at the targeted facilities in FY90.

EPA identified a total of 75 violations of its standards at the 29 facilities inspected. Fourteen (14) violations were identified for failure to provide adequate information and/or training to employees (see Table 6). Sixteen (16) violations were identified for non-compliance with the contingency plan and emergency response requirements (see Table 7). Twenty-nine (29) violations were noted for non-compliance with general inspections and preparedness and prevention requirements (see Table 8). Sixteen (16) violations were identified for failure to comply with operating procedures requirements. Of these 16 violations, five (5) are related specifically to incinerator operations, whereas the remainder are associated with other hazardous waste handling at the facilities (see Table 9).

Approximately 80% of the 75 violations EPA found were related to deficiencies in complying with general inspection requirements, personnel training, and contingency plan requirements that are directed at safe operation of the facility. As with OSHA's findings, the problems found by EPA were not evenly distributed among facilities. EPA found no violations in the areas examined by the Task Force in eight (8) facilities. Among the 21 facilities with violations, 16 had less than three violations each. Also, of the 21 facilities with violations, only four (4) facilities had violations relating to the incinerator operations.

As EPA tried to determine potential emissions other than those mentioned above, it also noted a significant number of automatic waste feed cut-offs at about half of the hazardous waste incinerators inspected. The automatic waste feed cut-off system is required by the regulation and is intended to stop hazardous waste entering the incinerator combustion unit when certain operating conditions as specified in the permit are exceeded. It is not intended to be used as a routine measure to control operation of a hazardous waste incinerator. EPA does not currently have data indicating that these cut-offs affect hazardous waste incinerator emissions, however, the Agency prefers steady uninterrupted operations, as good

Table 6:
VIOLATIONS IN PERSONNEL TRAINING PROGRAMS

<u>Regulatory Citation</u>	<u>Total Violations</u>	<u>Description of Violation</u>
40 CFR 270.14	1 violation	Failure to prepare an outline of training program for instructing personnel to operate and maintain facility in safe manner.
40 CFR 264/265.16(d)(3)	5 violations	Inadequate content of training program.
40 CFR 264/265.16(a)(1)	1 violation	Training received by employee not relevant to job function.
40 CFR 264/265.16(a)(3)	3 violations	Failure to ensure that facility personnel are familiar with emergency procedures, emergency equipment, and emergency systems.
40 CFR 264/265.16(b) & (c)	4 violations	Failure to provide annual refresher training course on time. Failure to provide training within 6 months of employment. Failure to ensure employees worked under supervision until properly trained.

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Table 7:
**VIOLATIONS IN CONTINGENCY PLANS
AND EMERGENCY RESPONSE**

<u>Regulatory Citation</u>	<u>Total Violations</u>	<u>Description of Violation</u>
40 CFR 264/265.52	8 violations	Inadequate content of plan.
40 CFR 264/265.54	4 violations	Failure to amend plan with current information.
40 CFR 264/265.56	4 violations	Inadequate emergency procedures.

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Table 8:
**VIOLATIONS IN GENERAL INSPECTIONS REQUIREMENTS
AND PREPAREDNESS AND PREVENTION**

<u>Regulatory Citation</u>	<u>Total Violations</u>	<u>Description of Violation</u>
40 CFR 264/265.15	12 violations	Failure to maintain a schedule for inspection of equipment. Failure to keep a complete inspection log.
40 CFR 264/265.17	2 violations	Failure to take adequate precautions to prevent accidental ignition or reaction of wastes.
40 CFR 264/265.31	2 violations	Failure to maintain and operate facility to minimize the possibilities of releasing hazardous waste that would threaten human health and the environment.
40 CFR 264/265.32	1 violation	Failure to provide minimum equipment for preparedness and prevention.
40 CFR 264/265.33	4 violations	Failure to test and maintain equipment to ensure operation in emergencies.
40 CFR 264/265.35	6 violations	Failure to maintain adequate aisle space to allow unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment.
40 CFR 264/265.37	2 violations	Failure to make appropriate arrangements with local authorities to familiarize them with the facility.

**Table 9:
VIOLATIONS IN OPERATIONAL PROCEDURES**

<u>Regulatory Citation</u>	<u>Total Violations</u>	<u>Description of Violation</u>
40 CFR 264/265.170-.174	10 violations	Failure to comply with container management requirements.
40 CFR 264/265.177	1 violation	Failure to separate incompatible wastes in containers.
40 CFR 264/265.347(b)	1 violation	Failure to conduct daily inspections of incinerator and associated equipment.
40 CFR 264/265.347(c)	2 violations	Failure to test waste feed cutoff system.
40 CFR 264/265.345	2 violations	Failure to operate under acceptable operating limits (i.e., temperature, waste feed rate, CO levels, etc.)

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REFER TO:

WITHHELD LIST/ENVELOPE -- DOCUMENT NO. 186

**WITHHELD
DOCUMENT**

FROM FILE CATEGORY: RCRA Permit

DATED: (undated)

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Appendix A
FREQUENCY OF WASTEFEED CUTOFF AND
EMERGENCY BY-PASS OPENINGS

FACILITY	WASTEFEED CUTOFFS* (30 DAY PERIOD)	EMERGENCY BY-PASS OPENINGS (6 MONTH PERIOD)
A	-	- **
B	-	-
C	9	-
D	1,800	0
E	268	-
F	350	-
G	142	-
H	103	0
I	-	-
J	1,386 (Projected)***	0
K	16	24
L	0	0
M	146	47
N	13,325 (4 Units)	867
O	605	6
P	63	18 (Projected)

* EPA and the authorized States are in the process of determining whether these automatic wastefeed cutoffs are associated with permit-specific violations at individual facilities.

Note:
The Facilities Are Listed In An Arbitrary Order

** A "-" could mean that the facility does not have the emergency by-pass equipment or that it has no by-passes.

*** A number of these findings are projected based on values observed for a shorter period of time.

Appendix A
FREQUENCY OF WASTEFEED CUTOFF AND
EMERGENCY BY-PASS OPENINGS
(continued)

FACILITY	WASTEFEED CUTOFFS (30 DAY PERIOD)	EMERGENCY BY-PASS OPENINGS (6 MONTH PERIOD)
Q	24	91 (Projected)
R	0	-
S	900	1
T	-	-
U	150 (Projected)	-
V	0	-
W	-	-
X	6	-
Y	465	2
Z	943	-
AA	0	2
BB	-	-
CC	0	0

Note:
The Facilities Are Listed In An Arbitrary Order

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